

# SEQUENCE LISTING

<110> ImmunoGen, Inc.

<120> ANTI-IGF-I RECEPTOR ANTIBODY

<130> A8338

<140> 10/170,390

<141> 2002-06-14

<160> 96

<170> PatentIn version 3.2

<210> 1

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> antibody heavy chain complementarity determining region

<400> 1

Ser Tyr Trp Met His

1 5

<210> 2

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> antibody heavy chain complementarity determining region

<400> 2

Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Glu Lys Phe Lys

1 5 10 15

Arg

<210> 3

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> antibody heavy chain complementarity determining region

<400> 3

Gly Arg Pro Asp Tyr Tyr Gly Ser Ser Lys Trp Tyr Phe Asp Val  
1 5 10 15

<210> 4

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> antibody light chain complementarity determining region

<400> 4

Arg Ser Ser Gln Ser Ile Val His Ser Asn Val Asn Thr Tyr Leu Glu  
1 5 10 15

<210> 5

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> antibody light chain complementarity determining region

<400> 5

Lys Val Ser Asn Arg Phe Ser  
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<210> 6

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> antibody light chain complementarity determining region

<400> 6

Phe Gln Gly Ser His Val Pro Pro Thr  
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<210> 7

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> antibody heavy chain

<400> 7

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Glu Lys Phe  
50 55 60

Lys Arg Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Phe  
85 90 95

Ala Arg Gly Arg Pro Asp Tyr Tyr Gly Ser Ser Lys Trp Tyr Phe Asp  
100 105 110

Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 8

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> antibody light chain

<400> 8

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 9

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized light chain variable region

<400> 9

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 10  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> humanized light chain variable region

<400> 10

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 11  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>

<223> humanized light chain variable region

<400> 11

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 12

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized light chain variable region

<400> 12

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 13  
<211> 124  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> humanized heavy chain variable region

<400> 13

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Gln Lys Phe  
50 55 60

Gln Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Phe  
85 90 95

Ala Arg Gly Arg Pro Asp Tyr Tyr Gly Ser Ser Lys Trp Tyr Phe Asp  
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 14  
<211> 46  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> degenerate 3' light chain PCR primer - HindKL

<400> 14  
tatagagctc aagcttggat ggtgggaaga tggatacagt tgggtgc 46

<210> 15  
<211> 36  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> degenerate 3' heavy chain PCR primer- Bgl2IgG1

<400> 15  
ggaagatcta tagacagatg ggggtgtcgt tttggc 36

<210> 16  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> poly C 5' PCR primer - EcoPolyC

<400> 16  
tatatctaga attccccccc cccccccccc 30

<210> 17  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> degenerate 5' light chain PCR primer - Sac1MK



<400> 17  
gggagctcga yattgtgmts acmcarwctm ca 32

<210> 18  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> degenerate 5' heavy chain PCR primer - EcoR1MH1

<220>  
<221> misc\_feature  
<222> (18)..(18)  
<223> "n" may be any nucleic acid

<400> 18  
cttccggaat tcsargtnma gctgsagsag tc 32

<210> 19  
<211> 35  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> degenerate 5' heavy chain PCR primer - EcoR1MH2

<220>  
<221> misc\_feature  
<222> (18)..(18)  
<223> "n" may be any nucleotide

<400> 19  
cttccggaat tcsargtnma gctgsagsag tcwgg 35

<210> 20  
<211> 10  
<212> PRT  
<213> Mus musculus

<400> 20  
  
Asp Val Leu Met Thr Gln Thr Pro Leu Ser  
1 5 10

<210> 21  
<211> 10  
<212> PRT

<213> Mus musculus

<400> 21

Gly Arg Pro Asp Tyr Tyr Gly Ser Ser Lys  
1 5 10

<210> 22

<211> 24

<212> PRT

<213> Mus musculus

<400> 22

Ser Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp  
1 5 10 15

Ser Ala Val Tyr Tyr Phe Ala Arg  
20

<210> 23

<211> 57

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 23

cagggtgtaca ctcccaggtc caactgggtgc agtctggggc tgaagtgggtg aagcctg 57

<210> 24

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 24

caatcagaag ttccagggga aggccacac 29

<210> 25

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 25  
ccttccccctg gaacttctga ttgtagttag tacg 34

<210> 26  
<211> 37  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 26  
caggtgtaca ctccgatggt gtgatgaccc aaactcc 37

<210> 27  
<211> 37  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 27  
caggtgtaca ctccgatggt ttgatgaccc aaactcc 37

<210> 28  
<211> 39  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 28  
gactagatct gcaagagatg gaggctggat ctccaagac 39

<210> 29  
<211> 35  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 29  
ttgcagatct agtcagagca tagtacatag taatg 35

<210> 30  
<211> 48  
<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 30

gaatgggtacc tgcagaaacc aggccagtct ccaaggctcc tgatctac

48

<210> 31

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 31

gtggcagtgg agcagggaca gatttcac

28

<210> 32

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 32

gaaatctgtc cctgctccac tgccactg

28

<210> 33

<211> 19

<212> PRT

<213> Homo sapiens

<400> 33

Asp Leu Thr Leu Leu Gln Pro Gly Gln Lys Gly Asp Ser Arg Glu Lys  
1 5 10 15

Lys Arg Ala

<210> 34

<211> 18

<212> PRT

<213> Homo sapiens

<400> 34

Asp Val Thr Leu Leu Pro Pro Gly Gln Arg Gly Asp Ala Arg Glu Lys  
1 5 10 15

Lys Arg

<210> 35  
<211> 19  
<212> PRT  
<213> Homo sapiens

<400> 35

Asp Gln Ser Leu Ile Pro Pro Gly Gln Lys Gly Asp Ser Arg Asp Lys  
1 5 10 15

Lys Arg Ala

<210> 36  
<211> 18  
<212> PRT  
<213> Homo sapiens

<400> 36

Asp Met Ser Ser Val Arg Pro Gly Gln Lys Gly Ser Ser Ser Asp Lys  
1 5 10 15

Lys Arg

<210> 37  
<211> 18  
<212> PRT  
<213> Homo sapiens

<400> 37

Glu Val Ser Gly Pro Arg Pro Gly Gln Arg Gly Asp Ser Arg Glu Lys  
1 5 10 15

Lys Arg

<210> 38  
<211> 18

<212> PRT  
<213> Homo sapiens

<400> 38

Glu Val Ser Gly Pro Arg Pro Gly Gln Arg Gly Asp Ser Arg Glu Lys  
1 5 10 15

Lys Arg

<210> 39  
<211> 25  
<212> PRT  
<213> Homo sapiens

<400> 39

Gln Gln Gln Ala Leu Lys Pro Gly Lys Lys Thr Pro Gly Gln Glu Lys  
1 5 10 15

Lys Arg Lys Ser Ser Ser Glu Ala Ser  
20 25

<210> 40  
<211> 25  
<212> PRT  
<213> Homo sapiens

<400> 40

Gln Gln Val Ala Val Lys Pro Gly Lys Lys Thr Pro Gly Gln Gln Lys  
1 5 10 15

Gln Gly Lys Ser Ser Ser Glu Gln Ser  
20 25

<210> 41  
<211> 25  
<212> PRT  
<213> Homo sapiens

<400> 41

Gln Gln Gln Pro Leu Lys Pro Gly Lys Lys Thr Pro Gly Lys Asp Asp  
1 5 10 15

Lys Gly Thr Ser Asn Asn Glu Gln Ser

20

25

<210> 42  
<211> 25  
<212> PRT  
<213> Homo sapiens  
  
<400> 42

Gln Gln Val Ala Val Lys Pro Gly Lys Lys Thr Pro Gly Gln Gln Lys  
1 5 10 15

Lys Gly Lys Ser Ser Ser Glu Gln Ser  
20 25

<210> 43  
<211> 24  
<212> PRT  
<213> Homo sapiens  
  
<400> 43

Gln Val Ala Val Lys Pro Gly Lys Lys Thr Pro Gly Gln Gln Lys Gln  
1 5 10 15

Gly Lys Ser Ser Ser Glu Gln Ser  
20

<210> 44  
<211> 24  
<212> PRT  
<213> Homo sapiens  
  
<400> 44

Gln Val Ala Val Lys Pro Gly Lys Lys Thr Pro Gly Gln Gln Lys Gln  
1 5 10 15

Gly Glu Ser Ser Ser Glu Gln Ser  
20

<210> 45  
<211> 40  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR primer

<400> 45  
 ttttgagctc ttatttacca ggagagtggg agaggctctt 40

<210> 46  
 <211> 37  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 46  
 ttttaagctt gccaaaacga cccccccatc tgtctat 37

<210> 47  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 47  
 ttttgatcc taacaatcat tcctgttgaa gc 32

<210> 48  
 <211> 31  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 48  
 ttttgaattc gggctgatgc tgcaccaact g 31

<210> 49  
 <211> 396  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (1)..(396)

<400> 49  
 atg aag ttg cct gtt agg ctg ttg gtg ctg atg ttc tgg att cct gct 48  
 Met Lys Leu Pro Val Arg Leu Leu Val Leu Met Phe Trp Ile Pro Ala  
 1 5 10 15



tcc agt agt gat gtt ttg atg acc caa act cca ctc tcc ctg cct gtc	96
Ser Ser Ser Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val	
20 25 30	
agt ctt gga gat caa gcc tcc atc tct tgc aga tct agt cag agc att	144
Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile	
35 40 45	
gta cat agt aat gta aac acc tat tta gaa tgg tac ctg cag aaa cca	192
Val His Ser Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro	
50 55 60	
ggc cag tct cca aag ctc ctg atc tac aaa gtt tcc aac cga ttt tct	240
Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser	
65 70 75 80	
ggg gtc cca gac agg ttc agt ggc agt gga tca ggg aca gat ttc aca	288
Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr	
85 90 95	
ctc agg atc agc aga gtg gag gct gag gat ctg gga att tat tac tgc	336
Leu Arg Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys	
100 105 110	
ttt caa ggt tca cat gtt cct ccg acg ttc ggt gga ggc acc aag ctg	384
Phe Gln Gly Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu	
115 120 125	
gaa atc aaa cgg	396
Glu Ile Lys Arg	
130	

<210> 50  
 <211> 132  
 <212> PRT  
 <213> Mus musculus

<400> 50

Met Lys Leu Pro Val Arg Leu Leu Val Leu Met Phe Trp Ile Pro Ala	
1 5 10 15	
Ser Ser Ser Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val	
20 25 30	
Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile	
35 40 45	
Val His Ser Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro	
50 55 60	

Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser  
65 70 75 80

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
85 90 95

Leu Arg Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys  
100 105 110

Phe Gln Gly Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu  
115 120 125

Glu Ile Lys Arg  
130

<210> 51  
<211> 429  
<212> DNA  
<213> Mus musculus

<220>  
<221> CDS  
<222> (1)..(429)

<400> 51  
atg gga tgg agc tat atc atc ctc ttt ttg gta gca aca gct aca gaa 48  
Met Gly Trp Ser Tyr Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Glu  
1 5 10 15  
gtc cac tcc cag gtc caa ctg cag cag tct ggg gct gaa ctg gtg aag 96  
Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys  
20 25 30  
cct ggg gct tca gtg aag ctg tcc tgt aag gct tct ggc tac acc ttc 144  
Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
35 40 45  
acc agc tac tgg atg cac tgg gtg aag cag agg cct gga caa ggc ctt 192  
Thr Ser Tyr Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu  
50 55 60  
gag tgg att gga gag att aat cct agc aac ggt cgt act aac tac aat 240  
Glu Trp Ile Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn  
65 70 75 80  
gag aag ttc aag agg aag gcc aca ctg act gta gac aaa tcc tcc agc 288  
Glu Lys Phe Lys Arg Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser

85	90	95	
aca gcc tac atg caa ctc agc agc ctg	aca tct gag gac tct gcg gtc		336
Thr Ala Tyr Met Gln Leu Ser Ser Leu	Thr Ser Glu Asp Ser Ala Val		
100	105	110	
tat tac ttt gca aga gga aga cca gat	tac tac ggt agt agc aag tgg		384
Tyr Tyr Phe Ala Arg Gly Arg Pro Asp	Tyr Tyr Gly Ser Ser Lys Trp		
115	120	125	
tac ttc gat gtc tgg ggc gca ggg acc	acg gtc acc gtc tcc tca		429
Tyr Phe Asp Val Trp Gly Ala Gly Thr	Thr Val Ser Ser		
130	135	140	
<210>	52		
<211>	143		
<212>	PRT		
<213>	Mus musculus		
<400>	52		
Met Gly Trp Ser Tyr Ile Ile Leu Phe	Leu Val Ala Thr Ala Thr Glu		
1	5	10	15
Val His Ser Gln Val Gln Leu Gln Gln	Ser Gly Ala Glu Leu Val Lys		
20	25	30	
Pro Gly Ala Ser Val Lys Leu Ser Cys	Lys Ala Ser Gly Tyr Thr Phe		
35	40	45	
Thr Ser Tyr Trp Met His Trp Val Lys	Gln Arg Pro Gly Gln Gly Leu		
50	55	60	
Glu Trp Ile Gly Glu Ile Asn Pro Ser	Asn Gly Arg Thr Asn Tyr Asn		
65	70	75	80
Glu Lys Phe Lys Arg Lys Ala Thr Leu	Thr Val Asp Lys Ser Ser Ser		
85	90	95	
Thr Ala Tyr Met Gln Leu Ser Ser Leu	Thr Ser Glu Asp Ser Ala Val		
100	105	110	
Tyr Tyr Phe Ala Arg Gly Arg Pro Asp	Tyr Tyr Gly Ser Ser Lys Trp		
115	120	125	
Tyr Phe Asp Val Trp Gly Ala Gly Thr	Thr Val Thr Val Ser Ser		

130

135

140

<210> 53  
 <211> 10  
 <212> PRT  
 <213> Mus musculus

<400> 53

Gly Tyr Thr Phe Thr Ser Tyr Trp Met His  
 1 5 10

<210> 54  
 <211> 10  
 <212> PRT  
 <213> Mus musculus

<400> 54

Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn  
 1 5 10

<210> 55  
 <211> 15  
 <212> PRT  
 <213> Mus musculus

<400> 55

Gly Arg Pro Asp Tyr Tyr Gly Ser Ser Lys Trp Tyr Phe Asp Val  
 1 5 10 15

<210> 56  
 <211> 100  
 <212> PRT  
 <213> Mus musculus

<400> 56

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
 1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
 35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro  
100

<210> 57  
<211> 98  
<212> PRT  
<213> Mus musculus

<400> 57

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Glu Lys Phe  
50 55 60

Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Pro Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg

<210> 58  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>

<223> synthetic antibody structure

<400> 58

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 59

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic antibody structure

<400> 59

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Ser Ile Ser Ser Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Gln Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 60  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 60

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Thr Ile Val His Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Thr Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly  
85 90 95

Thr His Ala Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 61  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 61

Asp Ile Glu Leu Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 62



<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 62

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Phe Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Ser Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 63  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 63

Glu Leu Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Thr Ile Val His Ser  
20 25 30

Asn Gly Asp Thr Tyr Leu Asp Trp Phe Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 64

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic antibody structure

<400> 64

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Asn Gln Thr Ile Leu Leu Ser  
20 25 30

Asp Gly Asp Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile

65		70		75		80									
Ser	Arg	Val	Glu	Ala	Glu	Asp	Leu	Gly	Val	Tyr	Tyr	Cys	Phe	Gln	Gly
			85						90					95	

Ser	His	Val	Pro	Pro	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100					105						110	

Arg

<210> 65  
 <211> 113  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> synthetic antibody structure

<400> 65

Asp	Val	Leu	Met	Thr	Gln	Thr	Pro	Leu	Ser	Leu	Pro	Val	Ser	Leu	Gly
1				5					10					15	

Asp	Gln	Ala	Ser	Ile	Ser	Cys	Lys	Ser	Ser	Gln	Ser	Ile	Val	His	Ser
			20					25					30		

Ser	Gly	Asn	Thr	Tyr	Phe	Glu	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser
		35					40					45			

Pro	Lys	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro
	50					55					60				

Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65					70					75					80

Ser	Arg	Val	Glu	Ala	Glu	Asp	Leu	Gly	Val	Tyr	Tyr	Cys	Phe	Gln	Gly
				85					90					95	

Ser	His	Ile	Pro	Phe	Thr	Phe	Gly	Ser	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100					105						110	

Arg

<210> 66  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 66

Asp Val Leu Met Thr Gln Ile Pro Val Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ile Ile Val His Asn  
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 67  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 67

Asp Val Leu Met Thr Gln Thr Pro Val Ser Leu Ser Val Ser Leu Gly

1	5	10	15
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser	20	25	30
Thr Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser	35	40	45
Pro Lys Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro	50	55	60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile	65	70	75
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Ala	85	90	95
Ser His Ala Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys	100	105	110

Arg

<210> 68  
 <211> 113  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic antibody structure

<400> 68

Asp Val Leu Met Thr Gln Ile Pro Val Ser Leu Pro Val Ser Leu Gly	1	5	10	15
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ile Ile Val His Asn	20	25	30	
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser	35	40	45	
Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro	50	55	60	

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 69  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<220>  
<221> MISC\_FEATURE  
<222> (28)..(28)  
<223> "X" may be any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (101)..(101)  
<223> "X" may be any amino acid

<400> 69

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Xaa Ile Val His Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly  
 85 90 95

Ser His Val Pro Xaa Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

Arg

<210> 70  
 <211> 124  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> synthetic antibody structure

<400> 70

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
 20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
 35 40 45

Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Glu Lys Phe  
 50 55 60

Lys Arg Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Phe  
 85 90 95

Ala Arg Gly Arg Pro Asp Tyr Tyr Gly Ser Ser Lys Trp Tyr Phe Asp  
 100 105 110

Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser

115

120

<210> 71  
 <211> 120  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> synthetic antibody structure  
  
 <400> 71

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
 20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Asp Pro Asn Ser Gly Gly Thr Lys Tyr Asn Glu Lys Phe  
 50 55 60

Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Pro Ser Ser Thr Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Tyr Asp Tyr Tyr Gly Ser Ser Tyr Phe Asp Tyr Trp Gly Gln  
 100 105 110

Gly Thr Thr Val Thr Val Ser Ser  
 115 120

<210> 72  
 <211> 120  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> synthetic antibody structure  
  
 <400> 72



Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu Glu Trp Ile  
35 40 45

Gly Arg Ile Asp Pro Asn Ser Gly Gly Thr Lys Tyr Asn Glu Lys Phe  
50 55 60

Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Pro Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Tyr Asp Tyr Tyr Gly Ser Ser Tyr Phe Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Leu Thr Val Ser Ser  
115 120

<210> 73  
<211> 122  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 73

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
20 25 30

Trp Met His Trp Val Lys Gln Gly Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile Asp Pro Ser Asp Ser Tyr Pro Asn Tyr Asn Glu Lys Phe

50

55

60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
85 90 95

Ala Ser Leu Tyr Tyr Tyr Gly Thr Ser Tyr Gly Val Leu Asp Tyr Trp  
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 74

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic antibody structure

<400> 74

Gln Val Gln Leu Gln Gln Pro Gly Ser Val Leu Val Arg Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Ser  
20 25 30

Trp Ile His Trp Ala Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile His Pro Asn Ser Gly Asn Thr Asn Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Thr Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Val Asp Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Trp Arg Tyr Gly Ser Pro Tyr Tyr Phe Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Leu Thr Val Ser Ser  
115 120

<210> 75  
<211> 118  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 75

Gln Val Gln Phe Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
20 25 30

Leu Met His Trp Ile Lys Gln Arg Pro Gly Arg Gly Leu Glu Trp Ile  
35 40 45

Gly Arg Ile Asp Pro Asn Asn Val Val Thr Lys Phe Asn Glu Lys Phe  
50 55 60

Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Pro Ser Ser Thr Ala Tyr  
65 70 75 80

Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Tyr Ala Tyr Cys Arg Pro Met Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

Thr Val Thr Val Ser Ser  
115

<210> 76  
<211> 117  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 76

Gln Ile Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Arg Pro Gly Ala  
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr  
20 25 30

Tyr Ile His Trp Val Lys Gln Arg Pro Gly Glu Gly Leu Glu Trp Ile  
35 40 45

Gly Trp Ile Tyr Pro Gly Ser Gly Asn Thr Lys Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Thr Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Gly Gly Lys Phe Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser  
100 105 110

Val Thr Val Ser Ser  
115

<210> 77

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic antibody structure

<400> 77

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Met Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Thr Gly Tyr Thr Phe Ser Ser Phe  
20 25 30

Trp Ile Glu Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile Leu Pro Gly Ser Gly Gly Thr His Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Phe Thr Ala Asp Lys Ser Ser Asn Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly His Ser Tyr Tyr Phe Tyr Asp Gly Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 78

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic antibody structure

<400> 78

Gln Ile Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr  
20 25 30

Tyr Ile Asn Trp Met Lys Gln Lys Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Trp Ile Asp Pro Gly Ser Gly Asn Thr Lys Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Thr Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Glu Lys Thr Thr Tyr Tyr Tyr Ala Met Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Ser Val Thr Val Ser Ala  
115 120

<210> 79  
<211> 120  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 79

Gln Val Gln Leu Leu Glu Ser Gly Ala Glu Leu Met Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Thr Gly Tyr Thr Phe Ser Ser Phe  
20 25 30

Trp Ile Glu Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile Leu Pro Gly Ser Gly Gly Thr His Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Phe Thr Ala Asp Lys Ser Ser Asn Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly His Ser Tyr Tyr Phe Tyr Asp Gly Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 80  
<211> 115  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<400> 80

Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Met Lys Pro Gly Ala Ser  
1 5 10 15

Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Asp Tyr Trp  
20 25 30

Ile Glu Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile Gly  
35 40 45

Glu Ile Leu Pro Gly Ser Gly Ser Thr Asn Tyr His Glu Arg Phe Lys  
50 55 60

Gly Lys Ala Thr Phe Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr Met  
65 70 75 80

Gln Leu Asn Ser Leu Thr Ser Glu Asp Ser Gly Val Tyr Tyr Cys Leu  
85 90 95

His Gly Asn Tyr Asp Phe Asp Gly Trp Gly Gln Gly Thr Thr Leu Thr  
100 105 110

Val Ser Ser  
115

<210> 81  
<211> 121  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic antibody structure

<220>  
<221> MISC\_FEATURE  
<222> (20)..(20)  
<223> "X" may be any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (34)..(34)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (43)..(43)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (50)..(50)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (52)..(52)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (54)..(54)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (57)..(57)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (59)..(59)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (99)..(99)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (100)..(100)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (103)..(108)

<223> "X" may be any amino acid

<220>

<221> MISC\_FEATURE

<222> (116)..(116)

<223> "X" may be any amino acid

<400> 81

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala



1	5	10	15
Ser Val Lys Xaa Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr	20	25	30
Trp Xaa His Trp Val Lys Gln Arg Pro Gly Xaa Gly Leu Glu Trp Ile	35	40	45
Gly Xaa Ile Xaa Pro Xaa Ser Gly Xaa Thr Xaa Tyr Asn Glu Lys Phe	50	55	60
Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr	65	70	75
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Val Tyr Cys	85	90	95
Ala Arg Xaa Xaa Tyr Tyr Xaa Xaa Xaa Xaa Xaa Xaa Asp Tyr Trp Gly	100	105	110
Gln Gly Thr Xaa Val Thr Val Ser Ser	115	120	

<210> 82  
 <211> 113  
 <212> PRT  
 <213> Mus musculus  
  
 <400> 82

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly	1	5	10	15
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser	20	25	30	
Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser	35	40	45	
Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro	50	55	60	
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Arg Ile				

65		70		75		80									
Ser	Arg	Val	Glu	Ala	Glu	Asp	Leu	Gly	Ile	Tyr	Tyr	Cys	Phe	Gln	Gly
			85					90						95	

Ser	His	Val	Pro	Pro	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100					105						110	

Arg

<210> 83  
 <211> 113  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> humanized EM164 antibody

<400> 83

Asp	Val	Val	Met	Thr	Gln	Thr	Pro	Leu	Ser	Leu	Pro	Val	Ser	Leu	Gly
1				5					10					15	

Asp	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Ile	Val	His	Ser
			20					25					30		

Asn	Val	Asn	Thr	Tyr	Leu	Glu	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser
		35					40					45			

Pro	Arg	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro
	50					55					60				

Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ala	Gly	Thr	Asp	Phe	Thr	Leu	Arg	Ile
65					70					75					80

Ser	Arg	Val	Glu	Ala	Glu	Asp	Leu	Gly	Ile	Tyr	Tyr	Cys	Phe	Gln	Gly
			85					90						95	

Ser	His	Val	Pro	Pro	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100					105						110	

Arg

<210> 84  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> humanized EM164 antibody

<400> 84

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 85  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> humanized EM164 antibody

<400> 85

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly

1                      5                      10                      15  
 Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
                     20                      25                      30  
 Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
                     35                      40                      45  
 Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
                     50                      55                      60  
 Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
 65                      70                      75                      80  
 Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
                     85                      90                      95  
 Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
                     100                      105                      110

Arg

<210> 86  
 <211> 113  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> humanized EM164 antibody

<400> 86

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
 1                      5                      10                      15  
 Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
                     20                      25                      30  
 Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
                     35                      40                      45  
 Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
                     50                      55                      60

Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 87  
<211> 123  
<212> PRT  
<213> Mus musculus

<400> 87

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Glu Lys Phe  
50 55 60

Lys Arg Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Phe  
85 90 95

Ala Arg Gly Arg Pro Asp Tyr Tyr Gly Ser Ser Lys Trp Tyr Phe Asp  
100 105 110

Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser  
115 120

<210> 88  
<211> 123  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> humanized EM164 antibody

<400> 88

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Gln Lys Phe  
50 55 60

Gln Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Phe  
85 90 95

Ala Arg Gly Arg Pro Asp Tyr Tyr Gly Ser Ser Lys Trp Tyr Phe Asp  
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser  
115 120

<210> 89  
<211> 339  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> variable region of humanized EM164 antibody - light chain

<220>  
<221> CDS

<222> (1)..(339)

<400> 89

gat gtt gtg atg acc caa act cca ctc tcc ctg cct gtc agt ctt gga	48
Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly	
1 5 10 15	

gat cca gcc tcc atc tct tgc aga tct agt cag agc ata gta cat agt	96
Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser	
20 25 30	

aat gta aac acc tat tta gaa tgg tac ctg cag aaa cca ggc cag tct	144
Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser	
35 40 45	

cca agg ctc ctg atc tac aaa gtt tcc aac cga ttt tct ggg gtc cca	192
Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro	
50 55 60	

gac agg ttc agt ggc agt gga gca ggg aca gat ttc aca ctc agg atc	240
Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile	
65 70 75 80	

agc aga gtg gag gct gag gat ctg gga att tat tac tgc ttt caa ggt	288
Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly	
85 90 95	

tca cat gtt cct ccg acg ttc ggt gga ggc acc aaa ctg gaa atc aaa	336
Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys	
100 105 110	

cgt	339
Arg	

<210> 90

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> variable region of humanized EM164 antibody - light chain

<400> 90

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly	
1 5 10 15	

Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser	
20 25 30	

Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser	
---	--

35

40

45

Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
 85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

Arg

&lt;210&gt; 91

&lt;211&gt; 369

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; variable region of humanized EM164 antibody - heavy chain

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(369)

&lt;400&gt; 91

cag gtc caa ctg gtg cag tct ggg gct gaa gtg gtg aag cct ggg gct 48  
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Val Lys Pro Gly Ala  
 1 5 10 15

tca gtg aag ctg tcc tgt aag gct tct ggc tac acc ttc acc agc tac 96  
 Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
 20 25 30

tgg atg cac tgg gtg aag cag agg cct gga caa ggc ctt gag tgg att 144  
 Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
 35 40 45

gga gag att aat cct agc aac ggt cgt act aac tac aat cag aag ttc 192  
 Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Gln Lys Phe  
 50 55 60

cag ggg aag gcc aca ctg act gta gac aaa tcc tcc agc aca gcc tac 240  
 Gln Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr



65				70				75				80				
atg	caa	ctc	agc	agc	ctg	aca	tct	gag	gac	tct	gcg	gtc	tat	tac	ttt	288
Met	Gln	Leu	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Phe	
				85					90					95		
gca	aga	gga	aga	cca	gat	tac	tac	ggt	agt	agc	aag	tgg	tac	ttc	gat	336
Ala	Arg	Gly	Arg	Pro	Asp	Tyr	Tyr	Gly	Ser	Ser	Lys	Trp	Tyr	Phe	Asp	
				100					105				110			
gtc	tgg	ggc	caa	ggg	acc	acg	gtc	acc	gtc	tcc						369
Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser						
				115					120							

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<210> 92
<211> 123
<212> PRT
<213> Artificial Sequence
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<220>  
<223> variable region of humanized EM164 antibody - heavy chain

<400> 92

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Gln Lys Phe  
50 55 60

Gln Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Phe  
85 90 95

Ala Arg Gly Arg Pro Asp Tyr Tyr Gly Ser Ser Lys Trp Tyr Phe Asp  
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser  
115 120

<210> 93  
 <211> 339  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> light chain variable region of humanized EM164 v1.1 antibody

<220>  
 <221> CDS  
 <222> (1)..(339)

<400> 93  
 gat gtt ttg atg acc caa act cca ctc tcc ctg cct gtc agt ctt gga 48  
 Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
 1 5 10 15  
  
 gat cca gcc tcc atc tct tgc aga tct agt cag agc ata gta cat agt 96  
 Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
 20 25 30  
  
 aat gta aac acc tat tta gaa tgg tac ctg cag aaa cca ggc cag tct 144  
 Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
 35 40 45  
  
 cca aag ctc ctg atc tac aaa gtt tcc aac cga ttt tct ggg gtc cca 192  
 Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
 50 55 60  
  
 gac agg ttc agt ggc agt gga gca ggg aca gat ttc aca ctc agg atc 240  
 Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
 65 70 75 80  
  
 agc aga gtg gag gct gag gat ctg gga att tat tac tgc ttt caa ggt 288  
 Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
 85 90 95  
  
 tca cat gtt cct ccg acg ttc ggt gga ggc acc aaa ctg gaa atc aaa 336  
 Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105 110  
  
 cgt 339  
 Arg

<210> 94  
 <211> 113  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> light chain variable region of humanized EM164 v1.1 antibody

<400> 94

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly  
1 5 10 15

Asp Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser  
20 25 30

Asn Val Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Ile Tyr Tyr Cys Phe Gln Gly  
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Arg

<210> 95

<211> 339

<212> DNA

<213> Artificial Sequence

<220>

<223> light chain variable region of humanized EM164 v1.2 antibody

<400> 95  
gatgttttga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tccagcctcc 60  
atctcttgca gatctagtca gagcatagta catagtaatg taaacaccta tttagaatgg 120  
tacctgcaga aaccaggcca gtctccaagg ctctgatct acaaagtttc caaccgattt 180  
tctgggggtcc cagacagggt cagtggcagt ggagcaggga cagatttcac actcaggatc 240  
agcagagtgg aggctgagga tctgggaatt tattactgct ttcaaggttc acatgttcct 300

ccgacgttcg gtggaggcac caaactggaa atcaaacgt 339

<210> 96

<211> 339

<212> DNA

<213> Artificial Sequence

<220>

<223> light chain variable region of humanized EM164 v1.3 antibody

<400> 96

gatgttgtga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tccagcctcc 60

atctcttgca gatctagtca gagcatagta catagtaatg taaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccaaag ctctgatct acaaagtttc caaccgattt 180

tctgggggtcc cagacagggt cagtggcagt ggagcagggg cagatttcac actcaggatc 240

agcagagtgg aggctgagga tctgggaatt tattactgct ttcaaggttc acatgttcct 300

ccgacgttcg gtggaggcac caaactggaa atcaaacgt 339